FIG. 1

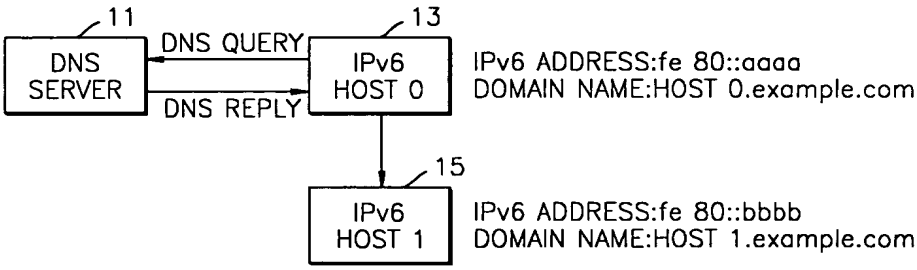

11
DNS SERVER
DNS QUERY
DNS REPLY
13
IPv6 HOST 0
IPv6 ADDRESS:fe 80::aaaa
DOMAIN NAME:HOST 0.example.com
15
IPv6 HOST 1
IPv6 ADDRESS:fe 80::bbbb
DOMAIN NAME:HOST 1.example.com

FIG. 2

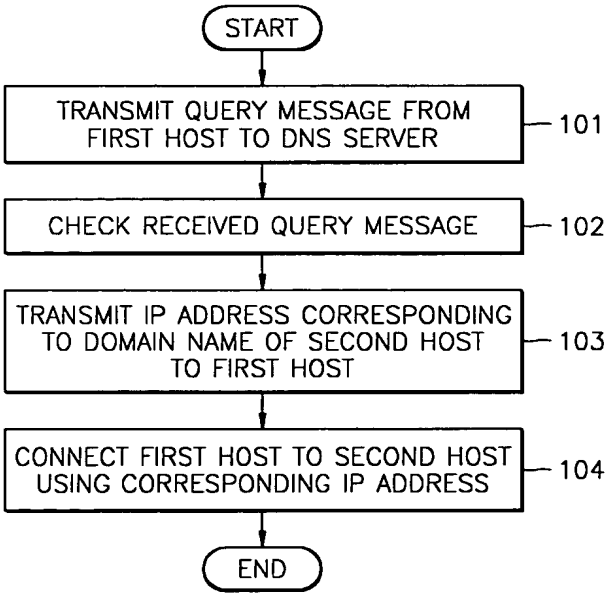

START
TRANSMIT QUERY MESSAGE FROM FIRST HOST TO DNS SERVER
101
CHECK RECEIVED QUERY MESSAGE
102
TRANSMIT IP ADDRESS CORRESPONDING TO DOMAIN NAME OF SECOND HOST TO FIRST HOST
103
CONNECT FIRST HOST TO SECOND HOST USING CORRESPONDING IP ADDRESS
104
END

FIG. 3

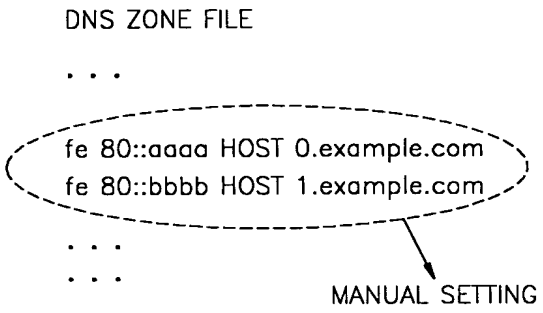

DNS ZONE FILE
. . .
fe 80::aaaa HOST 0.example.com
fe 80::bbbb HOST 1.example.com
. . .
. . .
MANUAL SETTING

FIG. 4

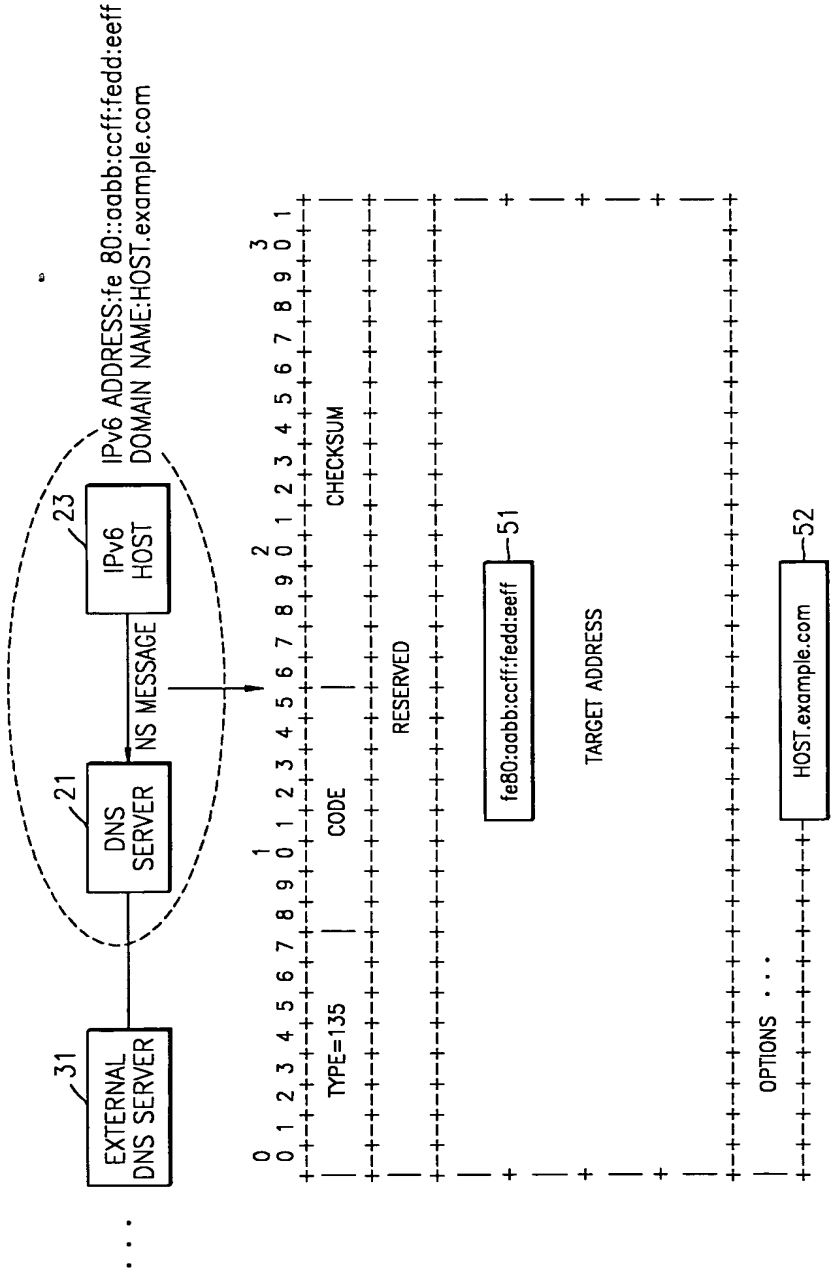

IPv6 ADDRESS:fe 80::aabb:ccff:fedd:eeff
DOMAIN NAME:HOST.example.com
23
IPv6 HOST
NS MESSAGE
21
DNS SERVER
31
EXTERNAL DNS SERVER
0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0 1
TYPE=135
CODE
CHECKSUM
RESERVED
fe80:aabb:ccff:fedd:eeff
51
TARGET ADDRESS
OPTIONS . . .
HOST.example.com
52

FIG. 5

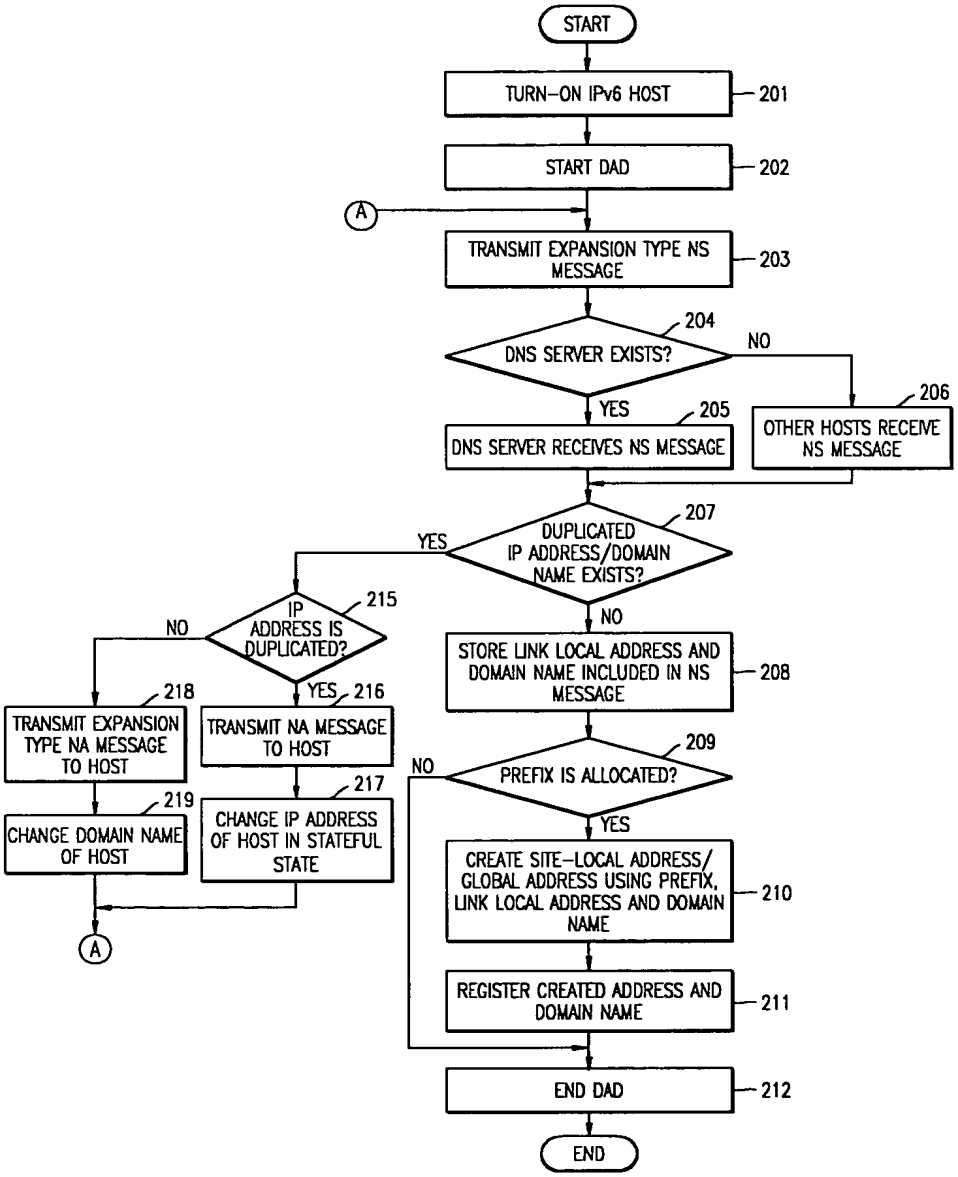

START
TURN-ON IPv6 HOST
201
START DAD
202
A
TRANSMIT EXPANSION TYPE NS MESSAGE
203
204
DNS SERVER EXISTS?
NO
YES
205
DNS SERVER RECEIVES NS MESSAGE
206
OTHER HOSTS RECEIVE NS MESSAGE
207
DUPLICATED IP ADDRESS/DOMAIN NAME EXISTS?
YES
NO
215
IP ADDRESS IS DUPLICATED?
NO
YES
218
TRANSMIT EXPANSION TYPE NA MESSAGE TO HOST
216
TRANSMIT NA MESSAGE TO HOST
219
CHANGE DOMAIN NAME OF HOST
217
CHANGE IP ADDRESS OF HOST IN STATEFUL STATE
A
STORE LINK LOCAL ADDRESS AND DOMAIN NAME INCLUDED IN NS MESSAGE
208
209
PREFIX IS ALLOCATED?
NO
YES
CREATE SITE-LOCAL ADDRESS/ GLOBAL ADDRESS USING PREFIX, LINK LOCAL ADDRESS AND DOMAIN NAME
210
REGISTER CREATED ADDRESS AND DOMAIN NAME
211
END DAD
212
END

FIG. 6

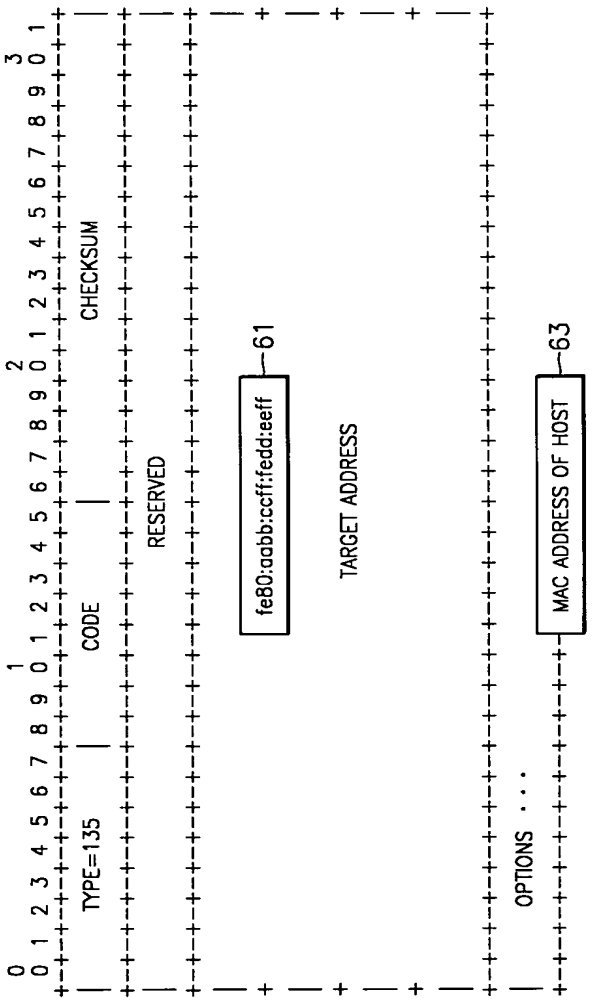
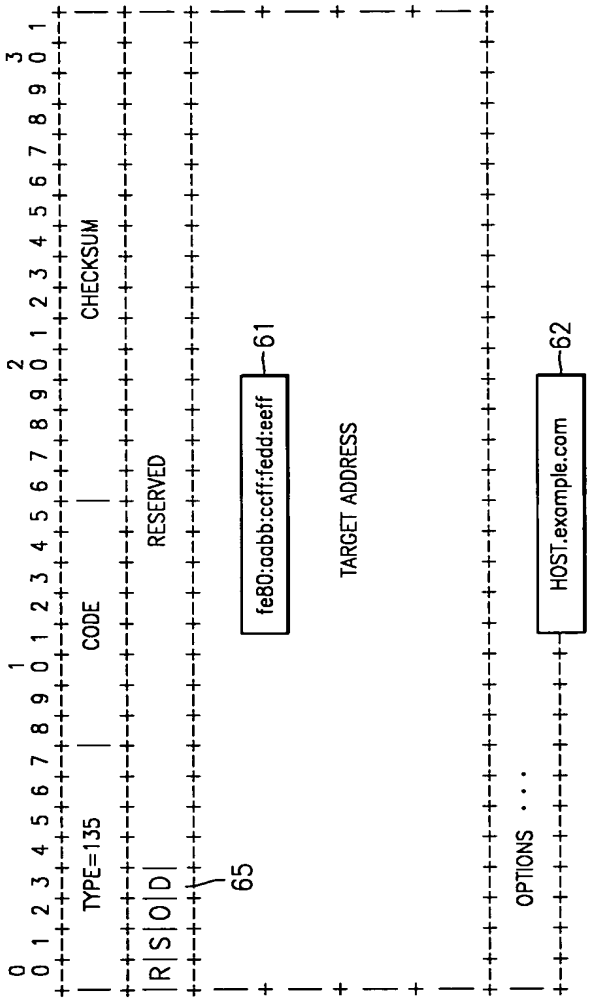

0 1 2 3
0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0 1
TYPE=135
CODE
CHECKSUM
RESERVED
fe80:aabb:ccff:fedd:eeff
61
TARGET ADDRESS
OPTIONS ...
MAC ADDRESS OF HOST
63

FIG. 7


0 1 2 3
0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0 1
TYPE=135
CODE
CHECKSUM
R S O D
RESERVED
65
fe80:aabb:ccff:fedd:eeff
61
TARGET ADDRESS
OPTIONS ...
HOST.example.com
62